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Peach Leaf Curl

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Appearance of the Disease.—For many fruit growers peach leaf curl* needs no description, especially in the advanced stages. Early stages of the disease are detected by the roughened surface of the young leaves and an excess of coloring. As the young leaves increase in size the curling and arching of the blades becomes more pronounced and the surface rougher. In contrast to the bright green of normal leaves, the curl-infected ones are pale green with an occasional leaf colored various shades of red and purple. Soon the entire surface of infected leaves assumes a grayish or mealy appearance and the leaves gradually dry up and fall off. This grayish color is caused by the fruiting fungus. Millions of sack-like bodies (asci) stand side by side on a single leaf. Inside each of these sacks eight seeds (spores) are produced which serve to spread the peach leaf curl fungus to the new developing buds.

It is thought that the spreading of spores from diseased leaves to new buds takes place in early summer, and that these spores lie dormant on the peach buds until the following spring. As long as the peach buds are perfectly dormant, infection does not take place. With the advent of warm weather in early spring the overwintering bud scales separate and the peach bud may then be infected by the peach leaf curl fungus if the spores are present. During many seasons the overwintering bud scales separate as early as February. If this is followed by warm, rainy weather, especially a number of days in succession, we have ideal conditions for the development of curl. Such was the spring of 1933 and Ohio experienced one of the worst curl outbreaks in the last 20 years.

Tree Injury.—After infection has taken place there is no spray known which will control the curl and not injure the leaves. It should be remembered that the leaves are the food manufacturing organs of the tree and that when the leaves are removed the tree cannot continue to grow or develop the fruit until new leaves are

* Caused by *Exoascus deformans.*

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formed. This uses up the reserve food supplies in the tree, lessens its vitality and makes it more subject to winter injury.

If a grower has failed to control curl, the trees should be given a detailed pruning and an additional application of nitrogenous fertilizer to aid in developing a second crop of leaves and fruit buds for the next season. If the curl infection is serious the current season's fruit will drop or be greatly reduced in size. This calamity was experienced by too many Ohio peach growers in 1933 to be regarded lightly.

Fall Spraying Advised.—Many peach growers have made the observation that the spray which was applied in the fall gave control, but that which was applied in the spring did not. The fall spraying was effective because it killed the dormant spores which overwinter on the buds. Usually there are a few warm days early in the spring before most fruit growers think about spraying. These few days are sufficient to cause the spores to germinate if no spray has been applied. For this reason fall spraying is advised. The spray may be made any time after the leaves have fallen and before winter sets in. The temperature should be above 40° F., and spraying should cease at least one hour before sundown to permit the spray to dry on the trees before freezing.

In some sections of the state it might not be necessary to spray for peach leaf curl every year. If peach growers have not sprayed for a period of ten years and curl has not occurred in serious proportions during that time, it would appear to be a waste of money to apply a dormant spray for the control of curl. However, there is no method known which may be used to forecast the amount of peach leaf curl that will be present in any one season until it is too late for control. Therefore, the only wise thing to do is to apply a spray each fall. Most diseases and insects require more than one application for control, but one thorough spray will in most seasons control 99 per cent of the leaf curl.

Materials to Use.—For fall applications either lime-sulfur or bordeaux mixture may be used. Where scale is not a factor, the strength of lime-sulfur should be either 6¼ gallons of liquid, or 15 pounds of dry to 100 gallons of spray. If scale is to be combated, the strength of lime-sulfur should be doubled. Bordeaux mixture 2-4-50 is cheaper and just as effective and may be substituted for the lime-sulfur when scale is not present.

For several years a number of growers in northern Ohio have used an oil emulsion for the control of red mite to which they added 2 pounds of copper sulfate to 50 gallons of spray for the control of leaf curl. They have seen no injury from this combination and have satisfactorily controlled both red mite and curl. However, severe twig injury and killing of buds has been reported from this combination in New York state. If it is necessary to spray with oil for red mite, this application should be made in the spring.

Oil should not be applied to peaches in the fall, because severe injury is likely to occur during the winter. Where red mite and leaf curl are both problems, it is advisable to apply 2-4-50 bordeaux mixture in the fall for curl and an oil spray in the spring for red mite.